

DIAGNOSTIC APPARATUS AND METHODS FOR A CHEMICAL DETECTION SYSTEM

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Abstract

10 A chemical detection system performs controlled exposures to diagnose the
pneumatic components and chemical sensors prior to measuring a chemical emission. A
control module provides the system control and data processing to perform the
diagnosis. The control module manipulates an emission sample retrieval system to
provide precise exposure during the diagnostic routines. A sensor interface circuit
interrogates the chemical sensors and stores the data for analysis. The chemical sensor
exhibits predictable changes in response during predetermined exposure scenarios. By
15 utilizing numerous time domain signal processing techniques, both system and sensor
level fault conditions are determined.